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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,860

01/25/2007

Kyu Young Kim

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EXAMINER

VAN, QUANG T

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

04/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,860	<b>Applicant(s)</b> KIM, KYU YOUNG	
	<b>Examiner</b> Quang T. Van	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17-25, 27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-25, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klapper (DE 31 35 290 A1) previously cited, in view of Lee (US 6,586,716) new cited.

Klapper shows a microwave oven 2, comprising a body forming an outer appearance; an inner case in the body having a cooking chamber 1 formed therein, the inner case having a pair of side walls 15, a rear wall, and top and bottom walls; an outfit room 19 provided at one of the pair of side walls of the inner case, the outfit room having a plurality of electric parts (such as fan 11, motor 14, heating element 12) mounted therein; and a convection assembly mounted at one of the pair of side walls 15 of the inner cases that transmits heat to the cooking chamber 1, wherein the convection assembly comprises: a convection heater 12 configured to generate heat for convection heating; and a convection fan 11 configured to transmit the heat generated by the heater to the cooking chamber, and wherein the convection heater is positioned adjacent the convection fan (see Figures 1 and 2 and the English abstract). However, Klapper does not disclose at least one hole in a bottom of the body; an exhaust fan on a upper surface of the inner case configured to introduce air into an inside of the body through the at least one hole; an exhaust opening in an upper surface of the body

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configured to discharge air passed through the exhaust fan to an outside of the body; and an exhaust flow passage positioned in the body to guide air introduced through the at least hole to the exhaust fan. Lee discloses, figures 1-4, at least one hole (37) in a bottom of the body (20); an exhaust fan (35) on a upper surface of the inner case configured to introduce air into an inside of the body through the at least one hole (37); an exhaust opening (col. 4, lines 15-24) in an upper surface of the body configured to discharge air passed through the exhaust fan (35) to an outside of the body (20); and an exhaust flow passage (40-41) positioned in the body to guide air introduced through the at least hole to the exhaust fan (col. 4, lines 45-61). It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Klapper at least one hole in a bottom of the body; an exhaust fan on a upper surface of the inner case configured to introduce air into an inside of the body through the at least one hole; an exhaust opening in an upper surface of the body configured to discharge air passed through the exhaust fan to an outside of the body; and an exhaust flow passage positioned in the body to guide air introduced through the at least hole to the exhaust fan as taught by Lee in order to introduce the air inside the oven body and exhaust the air outside the oven body.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Day (US 2002/0003140 A1) previously cited, in view of Lee (US 6,586,716) new cited. Day shows a microwave oven 20, comprising a body 22 forming an outer appearance; an inner case in the body having a cooking chamber 24 formed therein, the inner case having a pair of side walls 34, 36, a rear wall 38, and top 32 and bottom walls 30; an

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outfit room 28 provided at one of the pair of side walls of the inner case, the outfit room having a plurality of electric parts (including blower 50 and its motor, and electric heaters) mounted therein; and a convection assembly 50 mounted at one of the pair of side walls of the inner cases that transmits heat to the cooking chamber, wherein the convection assembly comprises: a convection heater (see paragraph [0037]) configured to generate heat for convection heating; and a convection fan 50 configured to transmit the heat generated by the heater to the cooking chamber, and wherein the convection heater is positioned adjacent the convection fan 50 (see Figures 1-11 and paragraphs [0035] – [[0051])). However, Day does not disclose at least one hole in a bottom of the body; an exhaust fan on a upper surface of the inner case configured to introduce air into an inside of the body through the at least one hole; an exhaust opening in an upper surface of the body configured to discharge air passed through the exhaust fan to an outside of the body; and an exhaust flow passage positioned in the body to guide air introduced through the at least hole to the exhaust fan. Lee discloses, figures 1-4, at least one hole (37) in a bottom of the body (20); an exhaust fan (35) on a upper surface of the inner case configured to introduce air into an inside of the body through the at least one hole (37); an exhaust opening (col. 4, lines 15-24) in an upper surface of the body configured to discharge air passed through the exhaust fan (35) to an outside of the body (20); and an exhaust flow passage (40-41) positioned in the body to guide air introduced through the at least hole to the exhaust fan (col. 4, lines 45-61). It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Day at least one hole in a bottom of the body; an exhaust fan on a upper

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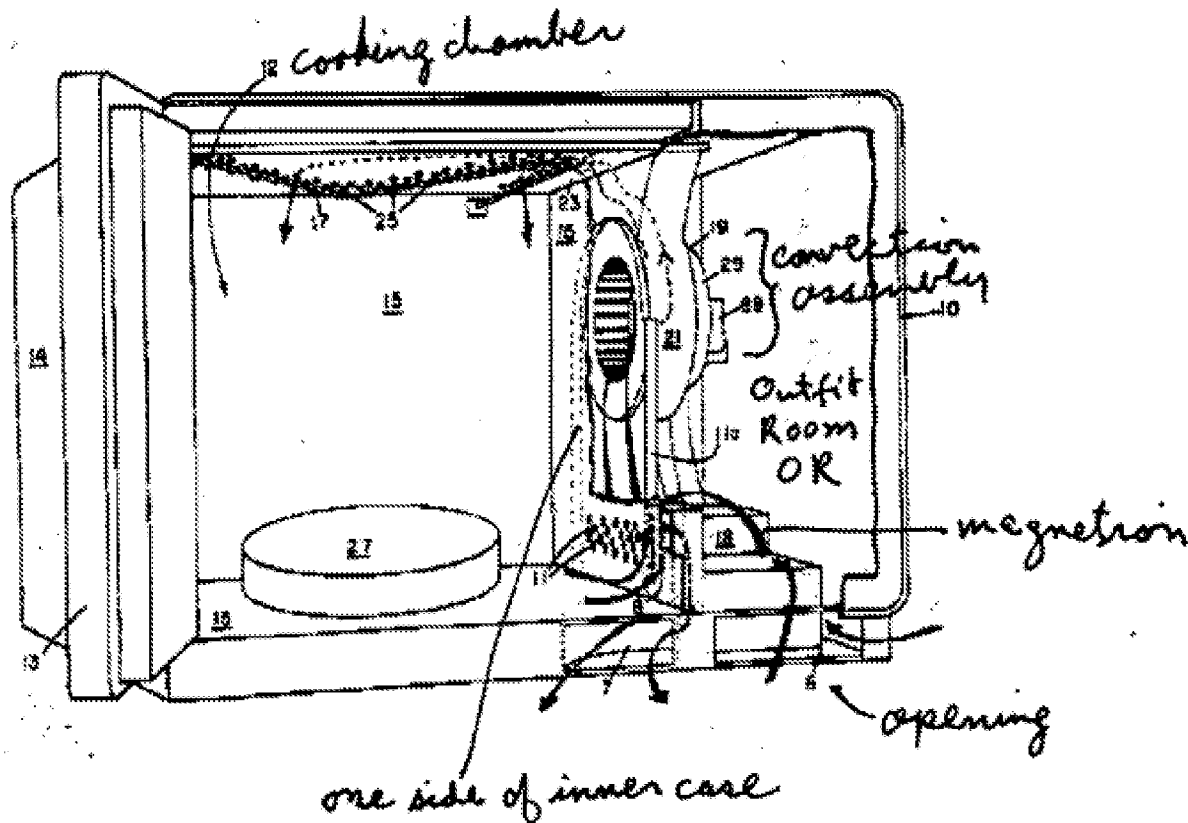
surface of the inner case configured to introduce air into an inside of the body through the at least one hole; an exhaust opening in an upper surface of the body configured to discharge air passed through the exhaust fan to an outside of the body; and an exhaust flow passage positioned in the body to guide air introduced through the at least hole to the exhaust fan as taught by Lee in order to introduce the air inside the oven body and exhaust the air outside the oven body.

4. Claims 2, 6, 21 and 27-28 are rejected under 35 U.S.C. 103(a) as being obvious over Klapper (DE 31 35 290 A1) previously cited, in view of Lee (US 6,586,716) new cited, and further in view of Larsen et al (US 4,332,992) (previously cited).

Klapper/Lee disclose substantially all features of the claimed invention, Klapper also discloses a convection assembly mounted at one of the pair of side walls 15 of the inner cases that transmits heat to the cooking chamber 1, wherein the convection assembly comprises: a convection heater 12 configured to generate heat for convection heating; and a convection fan 11 configured to transmit the heat generated by the heater to the cooking chamber, and wherein the convection heater is positioned adjacent the convection fan (see Figures 1 and 2 and the English abstract). However, Klapper/Lee do not disclose the location of the magnetron and the transformer being in the outfit room. Larsen shows a microwave oven comprising: a body 10 forming an outer appearance; an inner case 15 in the body having a cooking chamber 12 formed therein; an outfit room (marked as OR) at one side of the inner case, having various electric parts, (including a magnetron 18, a high voltage transformer 92), mounted therein; and a convection assembly (19, 21, 29) mounted at a side of the inner case, for

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transmitting heat to the cooking chamber and a convection heater 17 for generating heat for convection heating (see the marked-up copy of Figure 1 below).



It would have been obvious to an ordinary skill in the art at the time of invention to modify Klapper/Lee to locate the magnetron and transformer together with the convection assembly including the convection fan so that the oven enclosure can be more compact and the heat generating components, such as the magnetron and the transformer can be more effectively cooled, in view of the teaching of Larsen.

5. Claims 3, 4, 7-20 and 25 are rejected under 35 U.S.C. 103(a) as being obvious over Klapper (DE 31 35 290 A1) previously cited, in view of Lee (US 6,586,716), and

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Larsen et al (US 4,332,992), and further in view of Takeshita (JP 5-144561) (previously cited).

As set forth above, Klapper/Lee/Larsen shows every feature as claimed except for the location of the cooling fan. Takeshita shows a microwave oven having an outfit room including a magnetron 15, a transformer 16 and a cooling fan 3 located on an upper surface at a rear corner of the outfit room (as claimed in claims 3, 4). It also shows holes 21 in the bottom of the oven body and an exhaust opening 22 in an upper surface of the body (as claimed in claims 9, 12 and 16) (see Figures 1 and 2 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Klapper/Lee combined with Larsen to locate a cooling fan at the upper rear corner of the outfit room (OR) to more efficiently cool the electric components in the outfit room in order to form a compact size oven and reduce noise, in view of the teaching of Takeshita. The exact location of the fan and the air inlet and outlet holes would have been a matter of engineering expediency depending on the overall relative location of all the oven components, such as the electric heaters, the convection assembly, the microwave generating components and the power supply system.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being obvious over Klapper (DE 31 35 290 A1), in view of Lee (US 6,586,716), Larsen et al (US 4,332,992), and Takeshita (JP 5-144561), and further in view of Idomoto (JP 2-244586) (previously cited).

As set forth above, Klapper/Lee combined with Larsen and Takeshita shows every feature as claimed except for the use of a tilted cooling fan. Idomoto shows a



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microwave oven having an outfit room including a magnetron 4, a transformer 9, electric motor 5 and a cooling fan 2 which is tilted toward these heat generating components (see Figure 3 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Klapper/Lee combined with Larsen and Takeshita to tilt the cooling fan toward the heat generating components for more efficient and better cooling result, in view of the teaching of Idomoto.

***Response to Amendment***

7. Applicant's arguments with respect to claims 1-15, 17-25, and 27-28 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T. Van whose telephone number is 571-272-4789. The examiner can normally be reached on 8:00Am 5:00Pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang T Van/  
Primary Examiner, Art Unit 3742  
April 13, 2009

Quang T Van  
Primary Examiner  
Art Unit 3742